

Abstract

A probe card for testing semiconductor wafers, and a
5 method and system for testing wafers using the probe card are
provided. The probe card is configured for use with a
conventional testing apparatus, such as a wafer probe
handler, in electrical communication with test circuitry.
The probe card includes an interconnect substrate having
10 contact members for establishing electrical communication
with contact locations on the wafer. The probe card also
includes a membrane for physically and electrically
connecting the interconnect substrate to the testing
apparatus, and a compressible member for cushioning the
15 pressure exerted on the interconnect substrate by the testing
apparatus. The interconnect substrate can be formed of
silicon with raised contact members having penetrating
projections. Alternately the contact members can be formed
as indentations for testing bumped wafers. The membrane can
20 be similar to multi layered TAB tape including metal foil
conductors attached to a flexible, electrically-insulating,
elastomeric tape. The probe card can be configured to
contact all of the dice on the wafer at the same time, so
that test signals can be electronically applied to selected
25 dice as required.